IN THE CLAIMS

Please amend the claims to read as follows wherein changes in a claim are shown by strikethrough for deleted matter and underlining for added matter:

1. (Currently Amended) A method of adjusting an insulin dosing schedule involving the combination of a base insulin dosage administered over a given time interval (Basal Insulin) coupled with an additional insulin dosage administered in relation to a meal taken during the given time interval (Meal Insulin) comprising estimating a desired change in the Meal Insulin and then determining a change in the Basal Insulin from the difference between the change in ~~the~~ total insulin prescribed for the given time interval (Prescription Insulin) less the estimated desired change in the Meal Insulin for the given~~, in relation to the insulin dosages given during the same~~ time interval ~~for a previous day~~.

2. (Original) The method of claim 1, wherein the determined change in the Basal Insulin is divided by the elapsed time for the given time interval to obtain a change in the rate at which Basal Insulin is administered (Basal Rate), and then adding the change in the Basal Rate with the Basal Rate during the same time interval for a previous day to obtain a new dosage of Basal Insulin to be administered over the given time interval.

3. (Original) The method of claim 1, wherein the estimated desired change in the Meal Insulin is determined as a share of the total cumulative change in Meal Insulin for a

given day over a plurality of time intervals in the same proportion as the ratio of the Meal Insulin to the total of all Meal Insulin dosages for the day.

4. (Original) The method of claim 1, wherein the estimated desired change in the Meal Insulin is determined as a share of the total cumulative change in Meal Insulin for a given day in the same proportion as the ratio of the grams of carbohydrates ingested during the given time interval to the total grams of carbohydrates ingested over an entire day.

5. (Original) The method of claim 1, wherein the estimated desired change in the Meal Insulin is determined from the formula:

(grams of carbohydrates ingested during current time interval)/(carbohydrate-to-insulin ratio for the current time interval) minus (grams of carbohydrates ingested during current time interval)/(carbohydrate-to-insulin ratio for the same time interval for a prior day).

6. (Original) The method of claim 5, wherein the estimated desired change in the Meal Insulin is determined from a ratio of grams of carbohydrates to the dosage of insulin administered during a different time interval.

7. (Original) The method of claim 6, wherein the grams of carbohydrates ingested during the current time interval are determined as the carbohydrate-to-insulin ratio multiplied times the Meal Insulin for the given time interval.

8. (Currently Amended) A method of adjusting an insulin dosing schedule involving the combination of a base insulin administered over a given time interval (Basal Insulin) coupled with an additional insulin dosage administered in relation to a meal taken during the given time interval (Meal Insulin) comprising estimating a desired change in the Basal Insulin and then determining a change in the Meal Insulin from the difference between the change in total insulin prescribed for the given time interval (~~Prescribed~~ Prescription Insulin) and the estimated desired change in the Basal Insulin for the given time interval.

9. (Currently Amended) The method of claim 8, wherein the estimated desired change in the Basal Insulin is determined ~~from~~ in relation to the Basal Insulin for the same time interval on a different day.

10. (Original) The method of claim 8, wherein the estimated desired change in the Basal Insulin is determined from an average of Basal Insulin administered during the same time interval on a plurality of different days.

11. (Currently Amended) The method of claims 9 ~~and~~ or 10, wherein a conversion factor is applied to the Basal Insulin taken during the same time interval on one or more different days, the conversion factor being a statistically determined correlation between the Basal Insulin for the current time interval and that of a different time interval for ~~a~~ one or more previous ~~day or~~ days.

12. (Currently Amended) The method of claim 11, wherein the conversion factor is determined from a statistical correlation ~~is~~ taken from the patient's own past data.

13. (Currently Amended) The method of claim 11, wherein the conversion factor is determined from a statistical correlation ~~is~~ taken from a sampling of a plurality of patients.

14. (Currently Amended) The method of claim 8, wherein the desired change ~~to~~in the Basal ~~Rate~~Insulin for the given time interval is determined by the method of claim 16 and ~~multiplied~~ divided by the elapsed time over the given time interval to obtain ~~the~~a change in ~~the~~ Basal ~~Insulin~~Rate.

15. (Currently Amended) The method of claim 8, wherein the desired change in the ~~desired~~ Basal Insulin is determined by employing the method of claim 1.

16. (Currently Amended) A method of adjusting an insulin dosing schedule involving the combination of a base insulin dosage administered over a given time interval (Basal Insulin) coupled with an additional insulin dosage administered in relation to a meal taken during the given time interval (Meal Insulin) comprising a time interval that starts near the end of a meal, and in which an after meal insulin ~~bolus~~ dosage is administered intermediate between the start and the end of the given time interval, and in which a change to the Basal Insulin for the time interval is determined based on a later portion of the time interval, the change in the Basal Insulin being used to determine a change in the Basal Insulin for an earlier portion of the time interval which is subtracted from a desired change in the prescribed insulin dosage (Prescription Insulin) to obtain a change in the Meal Insulin for the given time interval.

17. (Original) The method of claim 16, wherein the change to the Basal Insulin in the later portion of the time interval is a predetermined fraction of a corrective insulin dosage at the end of the time interval.

18. (Currently Amended) The method of claim 17, including dividing the change to the Basal Insulin for the later portion of the time interval by the elapsed time over the given time interval to obtain a Basal Rate for the entire given time interval.

19. (Currently Amended) The method of claim 16, wherein the change in the prescribed insulin dosage (Prescription Insulin) for the earlier portion of the time interval

is a predetermined fraction of a corrective insulin dosage intermediate in the time interval after the meal.

20. (Currently Amended) The method of claim 19, wherein the change in the prescribed insulin dosage (Prescription Insulin) is a predetermined fraction that is the same as ~~that of claim 17~~the predetermined fraction used to determine the change to the Basil Insulin.

21. (Currently Amended) The method of claim 20, wherein the predetermined fraction used for determining the change in the prescribed insulin dosage is equal to the change in the total day's prescribed insulin divided by the total day's corrective insulin.

22. (Original) The method of claims 1, 8, and 16, further including converting the change in Meal Insulin to a new Meal Insulin dosage by adding the change in Meal Insulin to the previously determined Meal Insulin dosage for the given time interval of the immediately previous day.

23. (Currently Amended) The method of claim 1, further including determining a ~~new~~ carbohydrate-to-insulin ratio by dividing the grams of carbohydrates ingested during the given time interval by the new Meal Insulin for the given time interval.

24. (Original) The method of claim 23, wherein the grams of carbohydrates ingested are determined by multiplying a carbohydrate-to-insulin ratio by a Meal Insulin dosage for the given time interval of a previous day.

25. (Original) The method of claim 23, wherein the given time interval constitutes a whole day.

26. (Original) The method of claim 23, wherein the given time interval constitutes a time interval amounting to less than a whole day.

27. (Currently Amended) The method of converting a change in an insulin dosage administered in relation to a meal taken during a given time interval (Meal Insulin) to a change in carbohydrate-to-insulin ratio by ~~taking~~ multiplying the Meal Insulin by the calculus derivative of carbohydrate-to-insulin ratio with respect to Meal Insulin for a given time interval.

28. (Original) The method of claim 27, including calculating said derivative as the negative of the grams of carbohydrates ingested during a given time interval divided by the square of the Meal Insulin.

29. (Original) The method of claim 28, including calculating the grams of carbohydrates ingested during a given time interval as the carbohydrate-to-insulin ratio times Meal Insulin for the given time interval.

30. (Currently Amended) The method of claim ~~30~~29, including estimating the carbohydrate-to-insulin ratio based on a statistical correlation of carbohydrate-to-insulin ratio to body weight or to the total daily dose of insulin.

31. (Currently Amended) The method of claim ~~30~~29, including estimating the Meal Insulin as a pre-set fraction of the total daily dose of insulin.

32. (Original) The method of claim 31, wherein the pre-set fraction is one-half.

33. (Original) The method of claim 1, wherein the sum of Meal Insulin and a corrective after-meal insulin dosage is used in place of Meal Insulin.

34. (Original) The method of claim 1, wherein a feedback mechanism is used to regulate the relative proportions of the day's totals of Basal Insulin and Meal Insulin as part of the Prescription Insulin.

35. (Original) The method of claim 34, wherein the feedback mechanism is a factor representing the day's change in Basal Insulin divided by the day's change in Prescription Insulin.

36. (Currently Amended) The method of claim 35, wherein the feedback factor is calculated as:

~~BoTFbk(d) = BoT(d) + Kfbk*(BoTTgt - BoT(d))*sign(deRxInsl)~~ the current ratio of Basil Insulin to total daily insulin (Total Insulin) plus the change in Prescription Insulin times the difference between the ratio of Basil Insulin to Total Insulin minus a desired value for the ratio, wherein the change in Prescription Insulin is multiplied by a constant that is less than or equal to one.

37. (Currently Amended) The methods of claims 1, 8, and 16, wherein the data for determining ~~the values~~insulin dosing for a given time interval is data taken from the corresponding time interval for the previous day.

38. (Currently Amended) The methods of claims 1, 8, and 16, wherein the data for determining ~~the values~~insulin dosing for a given time interval is data taken from the corresponding time interval for a plurality of days and averaged.

39. (Currently Amended) The method of claims 1, 8 and 16, including calculating a corrective insulin dosage for the given time interval based on the difference

~~of~~between averaged blood glucose measurements taken at or near a specified time over a plurality of days and a target blood glucose level, the difference divided by a correction factor.

40. (Currently Amended) The method of claim 39, wherein ~~the~~ a change to Prescription Insulin is determined as a number less the corrective insulin dosage for the time interval.

41. (Currently Amended) The method of claim 40, wherein ~~the~~ a change to Prescription Insulin is determined as a fraction of the corrective insulin for the given time interval equal to a multiplying factor times the corrective insulin for the time interval.

42. (Currently Amended) The method of claim 41, wherein the multiplying factor is a number that provides a ~~response time for decreasing the amount of correction over a selected period of time for the correction~~ means of adjusting over successive dosing cycles the amount of the corrective insulin ultimately to zero.

43. (Currently Amended) The method of claim 42, wherein the multiplying factor is determined as:

one minus (the remaining percent of original error allowed at the end of ~~the~~ a given response time) raised to the power (one divided by the number of days in the response time).

44. (Currently Amended) The method of claim ~~40~~41, wherein ~~the value of the~~ a change in total day's Prescription Insulin is divided by the total day's corrective insulin to obtain the multiplying factor.

45. (omitted)

46. (Original) The method of claim 44, wherein the change to Prescription Insulin applied is limited to a maximum change value based on a set fraction of the sum of the day's total corrective insulin.

47. (Original) The method of claim 40, wherein the change to Prescription Insulin is limited to a maximum change value based on a set fraction of the corrective insulin determined at the end of a given time interval.

48. (Currently Amended) The method of claim 44, wherein the change to Prescription Insulin is automatically adjusted based on a percent standard deviation of a patient's blood glucose in a recent calendar period compared to the mean percent standard deviation of a population sample, and wherein if the patient's standard deviation is ~~high relative to~~higher than the mean standard deviation of the population sample, then less change in the Prescription Insulin is employed than the change determined.

49. (Original) The method of claim 48, wherein the change in Prescription Insulin equals a fraction multiplier times the maximum change determined.

50. (Currently Amended) The method of claim 49, wherein the multiplier is determined as follows: if the patient's percent standard deviation of blood glucose measurements is less than the mean ~~of the population~~ of the population percent standard deviations plus one standard deviation of the population percent standard deviations, then the value of the multiplier is one; if the patient's percent standard deviation of blood glucose measurements is between one and two percent standard deviations of the population standard deviation greater than the mean of the population percent standard deviation, then the multiplier is set to ramp linearly downwardly until it reaches zero at the upper bound of this interval; and if the patient's standard deviation of blood glucose measurements is greater than this, then the multiplier is set to zero, allowing no change in Prescription Insulin.

51. (Currently Amended) The method of Claim 35 of ~~automatically~~ estimating a change in a day's total Basil Insulin in relation to the minimum of the absolute values of the following: (change in total day's Prescription Insulin) and (a target Basil Insulin minus the current Basil Insulin), the resulting minimum value being multiplied times the sign of the latter quantity. ~~a change in the total day's base insulin dosage based on the absolute value of the minimum of the absolute values of the change in the total day's~~

~~prescribed insulin dosage and a target base insulin dosage less the current base insulin dosage for a time interval shorter than a total day.~~

52. (Currently Amended) The method of Claim 36 wherein ~~the~~ a target ratio of Basal Insulin over Total Insulin is determined as: one minus the quantity of total grams of carbohydrates ingested over a day times an Average Glycemic Index divided by the result of ~~any known~~ a statistically-based formula for daily energy requirements of a patient~~,~~ given the patient's body measurements or other parameters.

53. (Canceled)

54. (Currently Amended) The method of Claim 51 wherein the estimation of the change in Basal Insulin is converted into an automatic value of change in Meal Insulin by subtracting the change in Basal Insulin from ~~change to total~~ the day's change in Prescription Insulin.

55. (Original) The method of Claim 54 wherein the estimation of change to Meal Insulin is multiplied by a fractional reduction factor if the change is in the positive direction.

56. (Currently Amended) The method of Claims 1, 8 and 16 further including the step of correcting for a missed insulin bolus scheduled at a given time by adjusting

the next scheduled insulin bolus based on an evaluation of insulin boluses scheduled for the scheduled time intervals on either side of the given time ~~a skipped corrective insulin bolus at a time boundary determined based on the sum of insulin boluses from time intervals on either side of a skipped blood glucose measurement corresponding to the skipped corrective insulin bolus~~.

57. (Canceled)

58. (Currently Amended) The method of Claims 1,8, and 16, further including the determination of an insulin dose ~~bolus~~ based on the amount of exercise for the given period of time resulting in a negative insulin dosage suspending the Basal ~~Rate~~ Insulin infusion for the appropriate amount of time.

59. (Currently Amended) The method of Claim ~~38~~39 wherein a Large Domain ~~f~~Formula is employed to distribute ~~the day's~~ a desired change in Prescription Insulin for a day among various time intervals during the day when the day's total ~~T~~total ~~C~~corrective ~~I~~insulin for a day or a given time interval divided by the ~~un-modified~~ desired ~~C~~change to Prescription Insulin is less than one.

60. (Currently Amended) The method of Claim 59 wherein the Large Domain Formula determines the ~~C~~change in Prescription Insulin within an interval or sub-interval as follows: giving to each interval the full amount of the ~~C~~corrective ~~I~~insulin calculated

based on a blood glucose measurement at the end of the interval, then distributing the difference between a desired change in the day's total Prescription Insulin and the day's total ~~C~~corrective ~~I~~insulin among the time intervals in proportion to each time interval's share of the quantity of old Basal Insulin plus ~~C~~corrective ~~I~~insulin.

61. (Currently Amended) The method of Claim 60 wherein, within ~~an~~ a given time interval or sub-interval, the Large Domain Formula for determining the change in Prescription Insulin is equal to the ~~C~~corrective ~~I~~insulin interval to be administered at the end of the time interval plus the quantity (total change in Prescription Insulin minus the day's total ~~C~~corrective ~~I~~insulin) times the quantity (Basal Insulin for the given time interval plus the ~~C~~corrective ~~I~~insulin to be administered at the end of the time interval) divided by the quantity (~~T~~total ~~C~~corrective ~~I~~insulin plus total day's Basal Insulin).

62. (Currently Amended) The method of Claim 61 wherein the formula is implemented by use of a switching parameter as follows: change in Prescription Insulin for the given time interval equals the switching parameter times the Large Domain Formula plus the quantity ~~(~~one minus the switching parameter~~)~~ times a Small Domain Formula.

63. (Currently Amended) The method of Claim 62 wherein the value of the switching parameter is one if the ~~day's~~ total ~~C~~corrective ~~I~~insulin to be administered at the

end of the time intervals for a day divided by the day's change in Prescription Insulin is greater than one, and has the value of zero otherwise.

64. (Currently Amended) The method of Claim 59 wherein two Large Domain Formulas are used, one for a first part of the given time interval and one for a latter part of the given interval.

65. (Currently Amended) The method of Claim 64 wherein the Large Domain Formula for the first part of the time interval is calculated as: the change in Prescription Insulin for the first part of the given time interval is equal to an After-Meal Corrective Insulin for the given time interval plus the quantity (the day's change in Prescription Insulin minus the day's total After-Meal Corrective Insulin minus the day's total of the Corrective Insulin to be administered at the end of the time intervals for the day) times the quantity (the After-Meal Corrective Insulin for the interval plus the Basal Insulin in the time interval) divided by the quantity (the day's total After-Meal Corrective Insulin plus the day's total of the ~~C~~corrective ~~I~~insulin to be administered at the end of the time intervals for the day plus the day's total Basal Insulin).

66. (Currently Amended) The method of Claim 64 wherein the Large Domain Formula for the last part of the interval is calculated as: the change in Prescription Insulin for the last part of the given time interval is equal to the ~~C~~corrective ~~I~~insulin to be administered at the end of the time interval plus the quantity (the day's change in

Prescription Insulin minus the day's total After-Meal Corrective Insulin minus the total of the ~~C~~corrective ~~I~~insulin to be administered at the end of the time intervals for the day) times the quantity (the ~~C~~corrective ~~I~~insulin plus the Basal Insulin in the given time interval) divided by the quantity (the day's total After-Meal Corrective Insulin plus the day's total of ~~C~~corrective ~~I~~insulin plus the total day's Basal Insulin).

67. (Currently Amended) The method of Claim 64 wherein a switching parameter is used for both parts of the time interval and the value of the switching parameter is one if the ratio of (day's ~~T~~total After-Meal Corrective Insulin plus ~~C~~corrective ~~I~~insulin to be administered at the end of the time interval) divided by (the day's change in Prescription Insulin) is greater than one, and has the value of zero otherwise.

68. (Currently Amended) The method of claim 37 wherein the method is implemented in the form of a program ~~is~~ installed in an insulin pump.

69. (Currently Amended) The method of claim 37 wherein the method is implemented in the form of a program ~~is~~ installed in a kit comprising a blood glucose measuring device, an insulin delivery device, and a microprocessor, one of which being able to store data.

70. (Original) The method of claim 69 wherein the microprocessor is within the blood glucose measuring device.

71. (Original) The method of claim 69 wherein the microprocessor is within the insulin delivery device.

72. (Original) The method of claim 69 wherein the microprocessor is separately housed.

73. (Currently Amended) The method of Claim 38 wherein the method is implemented in the form of a program ~~is~~ used with pump patients.

74. (Currently Amended) The method of Claim 38 wherein the method is implemented in the form of a program ~~is~~ used with Multiple Daily Injection or Inhaled Insulin devices.

75. (Currently Amended) The method of claims 1, 8 and 16 wherein one of said methods ~~wherein one of the several algorithms described herein~~ is selectively applied to a given time interval depending on the characteristics of the given time interval.

76. (Currently Amended) The method of Claim 75 wherein each time interval is digitally flagged with an "interval-type" parameter as a cue to apply a certain type of dosing ~~algorithm~~method.

77. (Original) The method of Claim 75 wherein time intervals containing meals are identified.

78. (Original) The method of Claim 75 wherein time intervals containing occasional small snacks are identified.

79. (Original) The method of Claim 75 wherein a time interval is identified as the source of Basal Rate for use in determining insulin dosing during another time interval.

80. (Original) The method of Claim 75 wherein a time interval is identified as the source of Carbohydrate-to-Insulin Ratio for use in determining insulin dosing during another time interval.

81. (Original) The method of Claim 75 wherein time intervals containing After-Meal Corrective Insulin are identified by the presence of the After-Meal Corrective Insulin.

82. (Currently Amended) The method of Claim 75 wherein intervals with missing values of ~~C~~corrective ~~I~~insulin to be administered at the end of the time interval are identified by the absence of the ~~C~~corrective ~~I~~insulin.

83. (Currently Amended) The method of Claim 75, further including ~~wherein the version~~ taking data from the corresponding time interval for the previous day employs an automatic daily update ~~for Pumps~~ and selects the appropriate ~~algorithm~~ method for each time interval and each corresponding time interval represents either a single time interval from a previous day, or corresponding time intervals taken from a plurality of days and averaged.

84. (Currently Amended) The method of Claims 83 ~~and 5~~ wherein an estimated desired change in either Meal Insulin or Basil Insulin is determined as a share of the total cumulative change in Meal Insulin or Basil Insulin for a given day in the same proportion as the ratio of the grams of carbohydrates ingested during the given time interval to the total grams of carbohydrates ingested over an entire day and ~~the algorithm described in claim 4~~ is applied to time intervals containing small snacks.

85. (Currently Amended) The method of Claims 83 ~~and 8~~ wherein the ~~algorithm~~ method described in claim 8 is applied to time intervals containing meals.

86. (Currently Amended) The method of Claims 83 ~~and 5~~ wherein an estimated desired change in either Meal Insulin or Basil Insulin is determined as a share of the total cumulative change in Meal Insulin or Basil Insulin for a given day in the same proportion as the ratio of the grams of carbohydrates ingested during the given time interval to the total grams of carbohydrates ingested over an entire day and ~~the algorithm described in claim 4~~ and is applied to time intervals designated as the source of Basal Rate for use in determining insulin dosing during another time interval.

87. (Currently Amended) The method of Claims 83 ~~and 8~~ wherein the ~~algorithm~~ method described in Claim 8 is applied to time intervals designated as the source of Carbohydrate-to-Insulin Ratio for use in determining insulin dosing during another time interval.

88. (Currently Amended) The method of Claims ~~83 and 16~~ wherein the ~~algorithm~~ method described in claim 16 is applied to time intervals containing After-Meal Corrective Insulin doses.

89. (Currently Amended) The method of Claim 75, ~~wherein the version~~ including taking data from the corresponding time interval for the previous day ~~employs~~ and employing an automatic daily update for Multiple Daily Injection and Inhaled Insulin devices and ~~applies~~ selectively applying one of the methods of claims 1, 8 and 16 ~~the appropriate algorithm~~ to each interval.

90. (Currently Amended) The method of Claims 89 ~~and 5~~ wherein the estimated desired change in the Meal Insulin is determined from the formula:

(grams of carbohydrates ingested during current time interval)/(carbohydrate-to-insulin ratio for the current time interval) minus (grams of carbohydrates ingested during current time interval)/(carbohydrate-to-insulin ratio for the same time interval for a prior day) ~~the method described in claim 5~~ and is applied to intervals containing small snacks.

91. (Currently Amended) The method of Claims 89 ~~and 8~~ wherein the method described in Claim 8 is applied to intervals containing meals.

92. (Currently Amended) The method of Claims 89 ~~and 5~~ wherein the estimated desired change in the Meal Insulin is determined from the formula:

(grams of carbohydrates ingested during current time interval)/(carbohydrate-to-insulin ratio for the current time interval) minus (grams of carbohydrates ingested during current time interval)/(carbohydrate-to-insulin ratio for the same time interval for a prior day) ~~the method described in claim 5~~ and is applied to time intervals designated as the source of Basal Rate for use in determining insulin dosing during another time interval.

93. (Currently Amended) The method of Claims 89 ~~and 8~~ wherein the method described in Claim 8 is applied to time intervals designated as the source of

Carbohydrate-to-Insulin Ratio for use in determining insulin dosing during another time interval.

94. (Currently Amended) The method of Claim 75, wherein the estimation is based on ~~version whose input is in the form of~~ averages over a calendar period and one of the methods of claims 1, 8 and 16 is selected for one of a number of given time intervals.~~selects the appropriate algorithm to each time interval~~.

95. (Currently Amended) The method of Claims 94 ~~and 3~~ wherein the estimated desired change in the Meal Insulin is determined as a share of the total cumulative change in Meal Insulin for a given day over a plurality of time intervals in the same proportion as the ratio of the Meal Insulin to the total of all Meal Insulin dosages for the day and ~~the method described in claim 3~~ is applied to time intervals containing small snacks.

96. (Original) The method of Claims 94 ~~and 8~~ wherein the method described in claim 8 is applied to time intervals containing meals.

97. (Currently Amended) The method of Claim 94 ~~and 3~~ wherein the estimated desired change in the Meal Insulin is determined as a share of the total cumulative change in Meal Insulin for a given day over a plurality of time intervals in the same proportion as the ratio of the Meal Insulin to the total of all Meal Insulin dosages for the day and ~~the~~

~~method described in claim 3~~ is applied to time intervals designated as the source of Basal Rate for use in determining insulin dosing during another time interval.

98. (Currently Amended) The method of Claim 94 ~~and 8~~ wherein the method described in claim 8 is applied to time intervals designated as the source of Carbohydrate-to-Insulin Ratio for use in determining insulin dosing during another time interval.

99. (Currently Amended) The method of Claim 94 ~~and 16~~ wherein the method described in claim 16 is applied to time intervals containing After-Meal Corrective Insulin doses.

100. (Currently Amended) The method of Claim ~~7~~5 wherein the estimation is based on an average of data from corresponding time intervals over multiple previous days ~~Version of the invention whose input is in the form of averages~~ over a calendar period and one of the methods of claims 1, 8 and 16 is selected for one of a number of given time intervals for a Multiple Daily Injection device.~~selects the appropriate algorithm to each time interval~~.

101. (Currently Amended) The method of Claims 100 ~~and 5~~ wherein the estimated desired change in the Meal Insulin is determined from the formula: (grams of carbohydrates ingested during current time interval)/(carbohydrate-to-insulin ratio for the current time interval) minus (grams of carbohydrates ingested during current

time interval)/(carbohydrate-to-insulin ratio for the same time interval for a prior day) and ~~the method described in claim 5~~ is applied to time intervals containing small snacks.

102. (Currently Amended) The method of Claim~~s~~ 100 ~~and 8~~ wherein the method of claim 8 is applied to time intervals containing meals.

103. (Currently Amended) The method of Claim~~s~~ 100 ~~and 5~~ wherein the estimated desired change in the Meal Insulin is determined from the formula: (grams of carbohydrates ingested during current time interval)/(carbohydrate-to-insulin ratio for the current time interval) minus (grams of carbohydrates ingested during current time interval)/(carbohydrate-to-insulin ratio for the same time interval for a prior day) and ~~the method described in claim 5~~ is applied to time intervals designated as the source of Basal Rate for use in determining insulin dosing during another time interval.

104. (Currently Amended) The method of Claim 100 ~~and 8~~ wherein the method described in claim 8 is applied to time intervals designated as the source of Carbohydrate-to-Insulin Ratio for use in determining insulin dosing during another time interval.

105. (Currently Amended) The method of Claim ~~3~~ 8 wherein the estimation is based on an average of data from corresponding time intervals over multiple previous days and the method of estimation of claim 3 is applied to all dosing time intervals for an

insulin pump device ~~Multiple Days' Data version of the invention for Pumps selects the method described in Claim 3 to all the time intervals~~.

106. (Currently Amended) The method of Claim 51, further including calculating Basal Insulin in a give time interval as a ~~F~~feedback ~~F~~factor times the ~~C~~corrective ~~I~~insulin to be administered at the end of a given time interval. ~~and calculating the Meal Insulin for the time interval as the quantity (one minus the Feedback Factor) times the Corrective Insulin for the interval.~~

107. (Original) The method of Claim 36 wherein the constant is chosen for optimum speed of convergence to a Target Basal Insulin-to-Total Ratio.

108. (Currently Amended) The method of claim ~~8~~ 23, ~~further including determining~~ wherein a new carbohydrate-to-insulin ratio is calculated for the whole day as (day's total grams of carbohydrate)/[(day's total grams of carbohydrate)/(old carbohydrate-to-insulin ratio) + (change in day's total Prescription Insulin) – (change in day's total Basal Insulin)]. ~~by dividing the grams of carbohydrates ingested during the time interval by the new Meal Insulin for the given time interval.~~

109. (Currently Amended) The method of claim 108, wherein the change in the day's total Basal Insulin is calculated as (the sum over all the time ntervals of the new Basal Rates times the intrval's time duration) – (the old total day's Basal Insulin).~~the~~

~~grams of carbohydrates ingested are determined by multiplying a carbohydrate-to-insulin ratio by a Meal Insulin dosage for the given time interval of a previous day.~~

110. – 111. (Canceled).

112. (Original) The method of claim 8, wherein the sum of Meal Insulin and a corrective after-meal insulin dosage is used in place of Meal Insulin.

113. –121. (Canceled).

122. (omitted)

123. – 129. (Canceled).

130. (New) The method of Claim 1, wherein the estimated desired change in the Meal Insulin is determined in relation to the Meal Insulin for the same time interval on one or more previous days.

131. (New) The method of Claim 51, further including calculating the Meal Insulin for the given time interval as the quantity (one minus the feedback factor) times the corrective insulin for the given time interval.